



INVESTIGATE TO ESTABLISH THE TRUTH – THE SOCRATIC METHOD IN MEDICINE

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ABSTRACT

Socratic Method is a method of elenchus where teaching is done by a series of question which instills critical thinking and ultimately achieves illumination on the particular subject of debate. Socrates nurtured his students in a process of discovering truth and giving birth to new realization on their own. The PAPER CLIP method of Questioning by Douglas helps in framing the Socratic questions. Socrates method of educating a learner helps the learner to enlighten himself on particular subjects with clear understanding of concepts.

In the field of medicine Socratic Method of questioning not only helps teaching the medical learners regarding the facts but also brings out the cause of the disease from the patients during history recording helping in diagnosis. It also has its application in psychotherapy and in the process of counseling the individuals. In research the series of questions helps to test the generated hypothesis. And with surplus of evidences in the network and the current ease of access to technology, Socrates questions helps to choose the right evidence. Socrates method is often confused with simply posing a series of questions similar to pimping. This review highlights the detailed application of Socratic Method in the field of Medicine.

KEYWORDS: Socratic, Socratic questioning, Socratic method, Socratic temperament, pimping

INTRODUCTION:

Investigation is a process to carry out a systematic examination or formal inquiry to discover and examine the facts so as to establish the truth. [1]. Scientific investigation is a quest to find the answer to a question using the scientific method. In turn, the scientific method is a systematic process that involves using measurable observations to formulate, test or modify a hypothesis. And a hypothesis is a proposed explanation for some observed phenomenon, based on experience or research. [2]

In the field of medicine there are various scenarios where a clinician has to investigate completely prior to establishing the truth. Diagnosing the disease of a patient is one such common scenario where the clinician carries out various investigations ranging from history taking which probes the cause of the illness to various blood and radiographic investigations that leads to confirmatory diagnosis of the disease; thus establishing the truth.

In this era of evidence based practice and moreover with surplus of endless data in the network it becomes imperative to determine what is right evidence that can be applied to the clinician's practice. And in search of evidence and through clinical experience in diagnosing individual problems, the physician becomes a researcher himself proposing various hypotheses. The quest to investigate the truth shall reside in the researcher while testing the hypothesis generated.

A clinician is also a teacher of medicine and should instill the same quest for knowledge and truth that he had imbibed all throughout among the learners. The Greek philosopher's method of encouraging the fundamental insight to an issue at hand and the problem based learning through artful questioning is considered the traditional methods that has been practiced, sometimes customized or modified to search the truth and achieve knowledge. Socrates taught by asking questions to draw out answers, in so doing illuminating the ultimate goal. This review thus revisits the Socratic Method and its applications in the field of medicine.

MATERIALS AND METHODS:

A search was undertaken in Pubmed, Medline and Google Scholar with search term 'Socratic', 'Socratic method' and 'socratic question'. Articles that have been published which applies or quotes the application of Socratic method in medicine and its related fields were included in the study. The content of all the available articles were searched for relevance and categorized and reviewed.

RESULTS:

A total of 28 articles which met the inclusion criteria were categorized and reviewed. (Table1) The Socratic Method has been found to be most commonly applied in practice and teaching of clinical medicine, medical ethics, surgery and dentistry. It is also applied in psychotherapy where cognition could be instilled by this method of questioning. Moreover the method has also been applied in framing policies, online learning method, research and searching evidence.

DISCUSSION:

Socratic Method of questioning:

Socratic Method is also known as maieutics, method of elenchus, or Socratic debate. Socrates nurtured his students in a process of discovering truth and giving birth to new realizations on their own. Therefore, true knowledge lies inside the particular learner all along. The teacher merely attends to the thinking process to deliver the truth. The method is analogized as a type of "intellectual midwifery"—the delivery of truth and knowledge in the learner.[3] In the context of daily learning, Einstein said that we should have 'holy curiosity'. The Socratic Method is a prolific way to kindle the productive fire of human curiosity.

The Socratic Method of questioning is so designed that it clarifies the concept, probes the assumptions exposing the underlying presuppositions and unquestioned beliefs, digs the rationale, reasons and evidence surpassing assumptions, questions and illuminates the other equally valid viewpoint and perspectives, probes the implications and consequences and last of all turns the question on itself.

Framing question for the learner is in itself an art. Douglas (2014) gives the PAPER CLIP method of framing questions. Questions of Precision (Can you be more specific?), Questions of Accuracy (How could we test that?), Questions of Perspective (Is there another point of view we could examine?), Questions of Equity (What conflicts of interest exist here?), Questions of Relevance (How does this relate to the problem?), Questions of Complexity (What makes this a difficult question to answer?), Questions of Logic (Does this all make sense together?), Questions of Importance (What is the most important issue on which to focus?) and Questions of Perspicuity (What do you mean?).[4] Socratic Method though involves asking a series of questions, just putting forward a lot of questions does not routinely characterize it to be the Socratic Method. Instead, the goal is to stimulate critical thinking and expose faulty reasoning through a series of questions and responses.

Elder and Paul (2007) classifies Socratic questions into six types of questions based on clarity, precision, accuracy, relevance, depth and breadth. [5]

Socratic Method vs Pimping:

Although many physicians claim to use Socratic method in teaching medicine, there are a lot of variations to this technique-ranging from the game of "Guess what I think" to pimping or to enlightening.

Brancati first described pimping in 1989 defining it as "whenever an attending poses a series of very difficult questions to an intern or a student." [6] He suggested that in pimping the questions "should come in rapid succession and should be essentially unanswerable." [7]

In the study by Wear et al. the final year medical Students who were the participants of the study divided pimping into "good" and "malignant". "Good pimp-

ing” is when the actions included questioning that advanced or enhanced the learning process and also encouraged students to be proactive about their learning. The method of questioning is considered to be “Malignant” when it frequently employs techniques designed to humiliate the learner. [8]

The physician should thus be able to distinguish pimping from the Socratic method of questioning. When a question is framed primarily the clinician should self examine the purpose for which the question is framed. The questions thus framed should promote critical thinking and should instill interest among the pupil to investigate and gain knowledge in regard to the subject.

The Socratic Method is a powerful tool to inspire students to take deep interest on their own to enthusiastically and willfully gain knowledge on medicine. Deep curiosity, fearless questioning, productive critical thinking and a lifelong quest for self-improvement are the basic characteristics that are required in an individual to be a productive learner.

Just asking questions is not the spirit of Socrates and is often unproductive. True master teachers should be capable of lighting the fires of inspiration in the hearts and minds of learners. Uninspired teaching is a murderous killer of human well-being. Teaching that functions with a vision to only see the paycheck, only focus on the inert transmission of data, or only embrace the pragmatics of merely getting through the work day shall destroy much of the life potential among the learners.

In the current system of our medical education innumerable volumes of medical facts are just delivered or introduced by the teachers to the students during clinical or lecture sessions and moreover learning is mostly based on memorization of these delivered facts. The evaluation of medical graduates are most of the time competency based and on how good they can memorize the facts, rather what is required utmost are the deeper understanding of the course material, critical thinking, cross evaluation of facts with currently available evidence and the practical applicability of the knowledge.

Table: 1 Application of Socratic method

| Application of Socratic method | No of articles | Author year |
|--------------------------------|----------------|---|
| In clinical medicine/ surgery | 5 | Grahame smith (1997)[9] J. Willis Hurst (2004)[10] Robert C. Oh(2005) [11] Annette Burgese (2014) [12] Hugh A Staddard (2015)[13] |
| In teaching | 13 | Constantinou (1997)[14] Paraskevas (2003)[15] Jeanne Ting Chowning (2009)[16] Adib Hafbagery (2011)[17] Pappanna KM (2013)[18] Douglas (2014)[4] Robert C. Oh (2014)[3] Amanda Cost (2015) [7] N. Pardo (2015)[19] Tayabha ali (2015)[20] Rita Shah (2016)[21] Andrea Paula Goldin (2017)[22] Pezhman Zarhe (2015)[5] |
| Psychotherapy | 5 | James C. Overholser (1993) [23] Jana Vyskosylova (2012) [24] Robert D. Friedberg (2015) [25] Justin De Braun (2015)[26] Gavin E. Clarke (2015)[27] |
| Medical Ethics | 1 | Dieter Bimbacher (1999)[28] |
| Framing Public Health policies | 1 | Ian Wylie (1999) [29] |
| Online learning | 1 | T Rick (2006) [30] |
| Qualitative research | 1 | Christine sorrelle Dinkins (2015) [31] |
| Searching the right evidence | 1 | David Grahame Smith (1995)[32] |
| Total | 28 | |

In the field of medicine every clinical scenario faced by the health care professional is different and every disease has a background cause for its occurrence. Unless there is a desire for self improvement, a quest for knowledge and the inherent nature to analyze and think critically many a time the clinician may fail to search for the prime cause for the illness thereby ostensibly a diagnosis is made. Hence an investigation of what lies behind is required not only in the clinical scenario; it has to be incorporated into an individual as a quest to find the truth.

Claude Levi-Strauss quotes the scientist is not a person who gives the right

answers; he's one who asks the right questions. In India the art of questioning dates way back to the Vedic period 1500BC where knowledge was considered to be achieved by three aspects - Sravana, Manana, and Nididhyasana. Sravana is hearing the truth, knowing what others have said about a subject, a state of existing knowledge, the information content of a subject. Manana is doubting, questioning, reasoning and arguing about what one gathers from sravana. It gives a student the understanding of the truth what he has learnt. Nididhyasana, involves in unceasing flow of knowledge (Jnanadhara), takes one beyond understanding the truth. It gives one realization of truth.

The method of learning should be such that it should change the temperament of the innumerable personnel who are too uninspired, unable or unaware to continue working persistently for the sake of their own understanding be it a teacher or a researcher or a clinician or a learner. Inculcating the character traits such as deep curiosity, fearless inquiry, and the unending passion of embracing the lifelong quest for understanding and self improvement are a natural result of the successful use of the Socratic Method.

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